

Sunshine of the Coggalbeg hoard and Blessington lunula

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Introduction

Coggalbeg hoard and Blessington lunula are not lunulas at all. Namely, this symbols are not Lunar, nor represent the symbol of crescent, which is a common opinion today. We will focus on the Coggalbeg “lunula”, but the same will be valid for the Blessington lunula, as well as all other artefacts with the same shape. This symbol represents the sun's throne, that is the yearly sun path as seen from the earth on the sky, better known in today's science as a YEARLY SUN PATH DIAGRAM. Diagram which, using the declination and azimuth of the sun, can show the overall yearly path of the sun, as seen from any location on the earth.

Some 100 “lunulas” have been discovered by archaeologists, with more than 80 from Ireland alone!!! The following short descriptions are taken from the internet:

Coggalbeg hoard

The Coggalbeg hoard is an Early Bronze Age hoard of goldwork jewellery dating to 4300–4000 BP. It was found in a bog at Coggalbeg, County Roscommon, Ireland in 1945,[1] and consists of a gold “lunula” (a crescent shaped "little moon") and two small gold discs, of a type known from other examples, decorated with a cross motif within two circles. The pieces are flat and thin, and collectively weigh under 78 grams (2.8 oz), indicating that they were probably intended as part of a necklace.

<https://www.archaeology.org/issues/188-1509/trenches/3578-trenches-bronze-age-ireland-gold>

The Blessington lunula

Gold lunula. Flat sheet crescent of beaten gold with quadrangular terminals. It is decorated with a finely-incised and complex geometric pattern. The horns are decorated with horizontal patterns of horizontal lines, concentric triangles, bands of diamond shaped motifs, triangles touching at their apex filled with horizontal lines, rows of small oblique lines, rows of small triangles.

https://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?objectId=818350&partId=1



(Courtesy National Museum of Ireland) Gold “lunula” and disks, Ireland



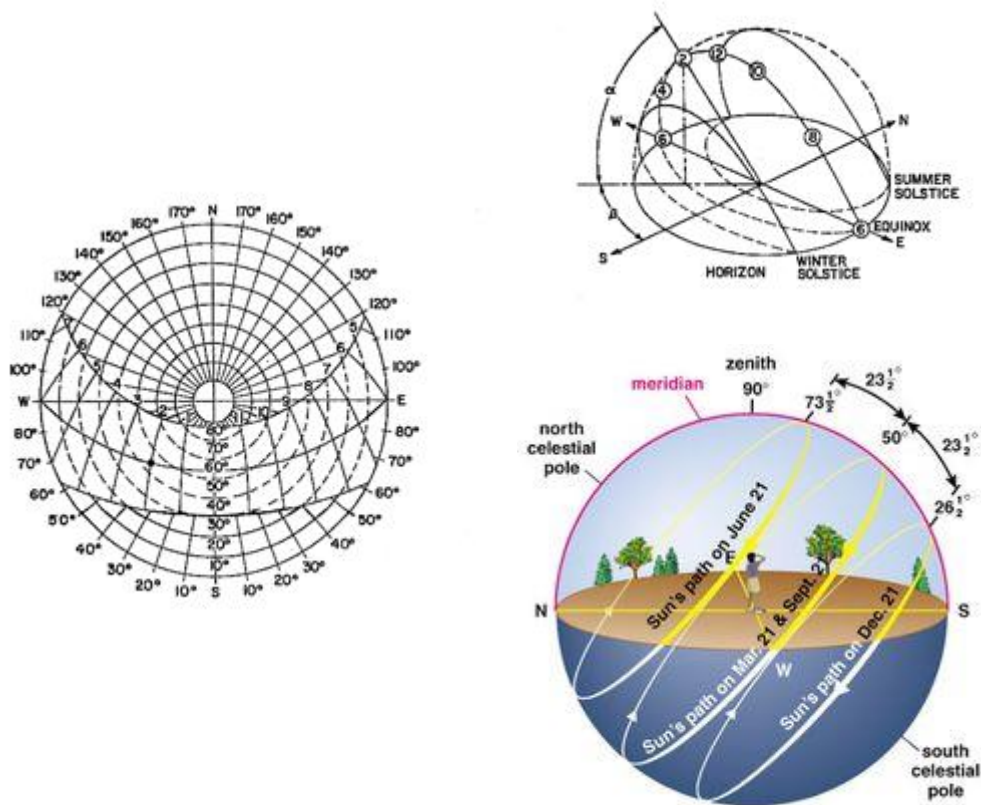
The Blessington “lunula”

The solar path diagram

Theoretical background

In order to prove this theory we will be using the so-called annual solar diagram, or sun path diagram which is used quite a lot in a modern energy industry for locational analysis related to the instalment of solar panels, or solar collectors. A bit assistance from the engineering world in order to learn truths in history and archaeology world ☺.

Let's explain first of course a bit of mathematics, astronomy behind. We will draw a few diagrams for that purpose:



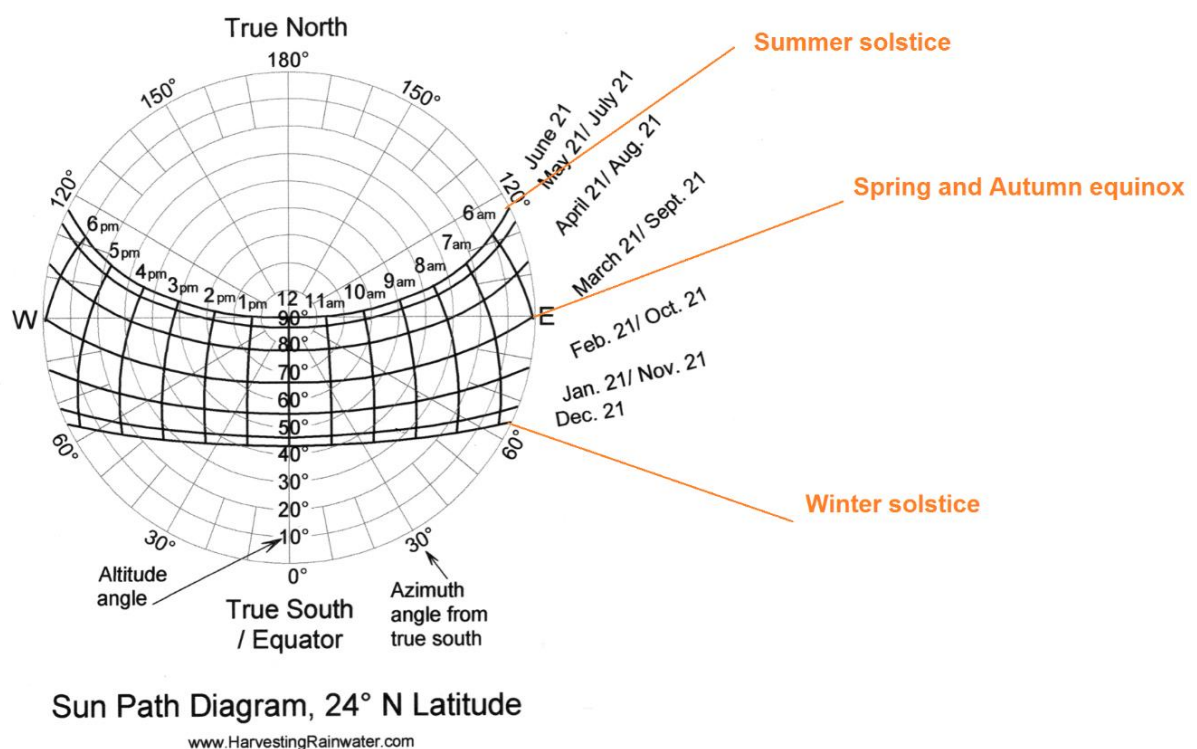
The sun path during the year viewed from the northern hemispheres

The left picture shows two-dimensional diagram, or the so-called Solar path diagram. This diagram in modern times, serves for energy calculations of the efficiency of solar panels and collectors in energy production. The right-hand drawings show the three dimensions of the one shown left, for better understanding.

A brief explanation of the movement of the sun during the year using the top right-handed images. Between the east and the west is the direction of the heavenly equator (0°). The sun symbol in the east is the spring equinox with the first day of spring, while the symbol of the Sun in the west is a sign of autumn equinox on the first day of autumn. The sky is north-south. In this direction, the Sun moves for six months from

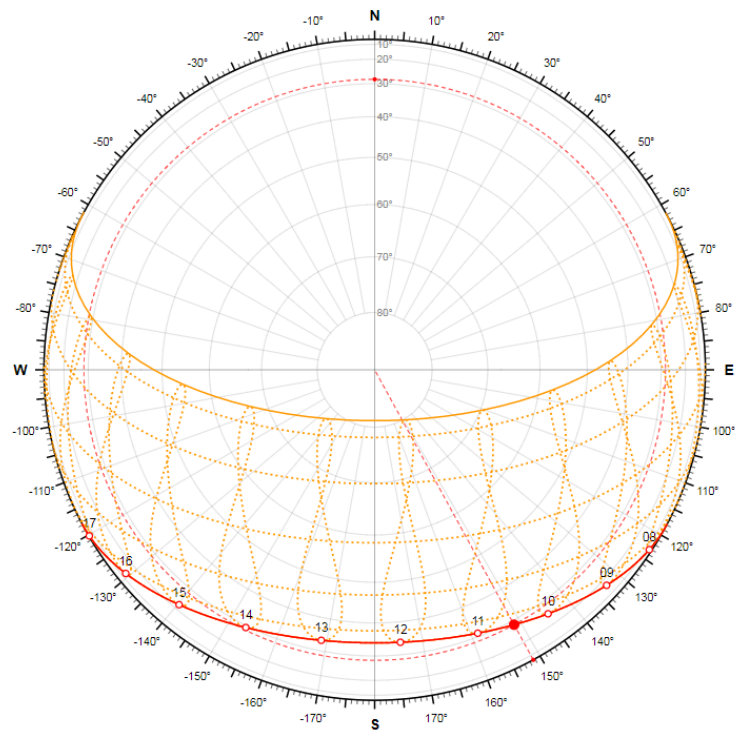
the south and on the first day of winter (-23.5°) to the north, and six months from the north and the first day of summer ($+23.5^\circ$) to the south, to the bottom.

The following is a school example of plotting the annual solar diagram of the movement of the sun, viewed from the perspective of a man standing on the northern earth's hemisphere ...

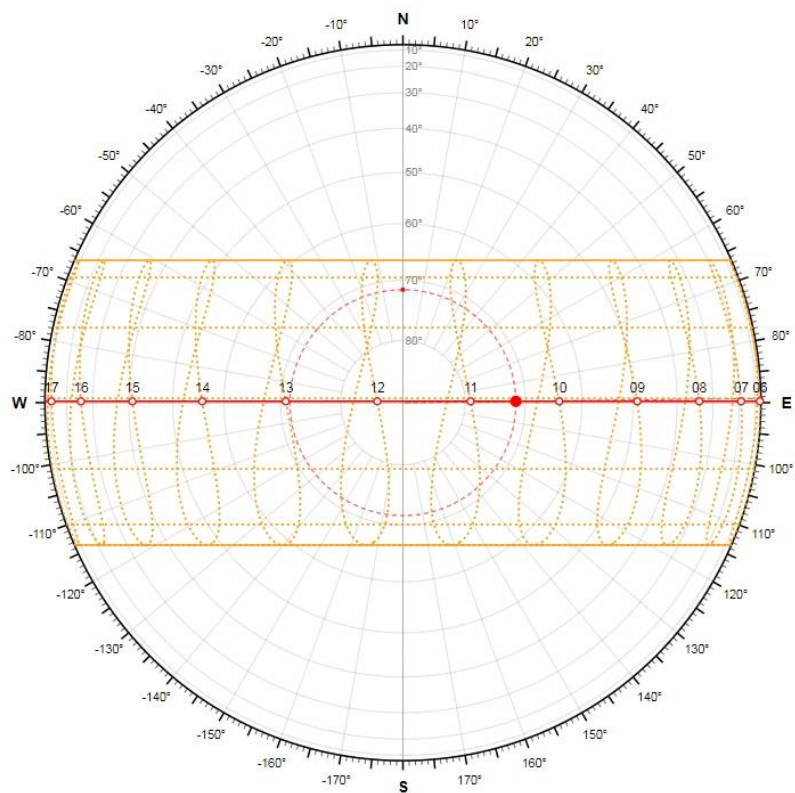


Sun path diagram for particular locations

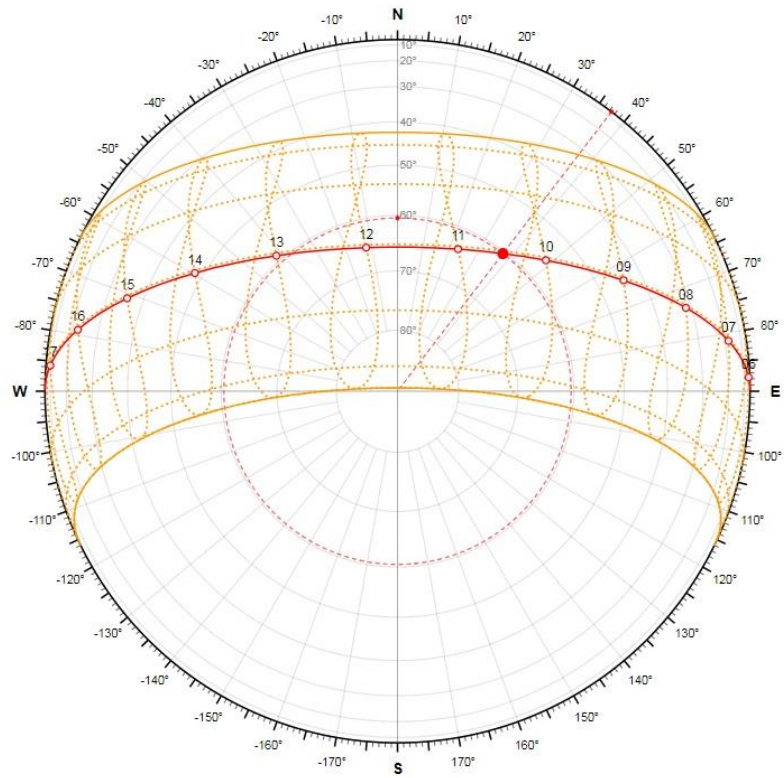
Now let us draw one yearly sun path diagram for the 32N Latitude:



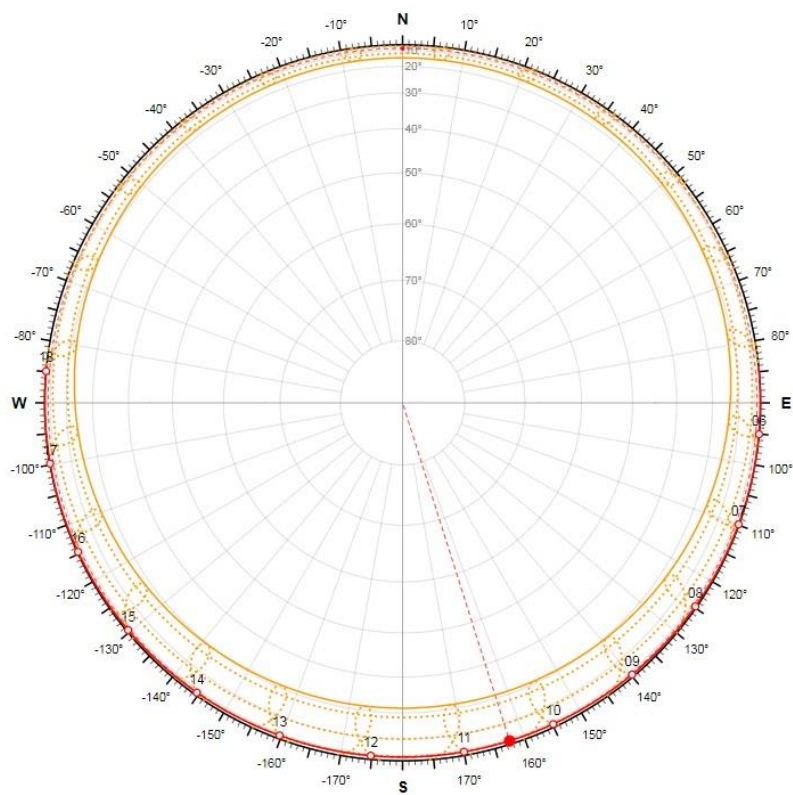
One for the point close to equator, just to notice the trend. So, for latitude of 0N, sun path diagram looks like this:



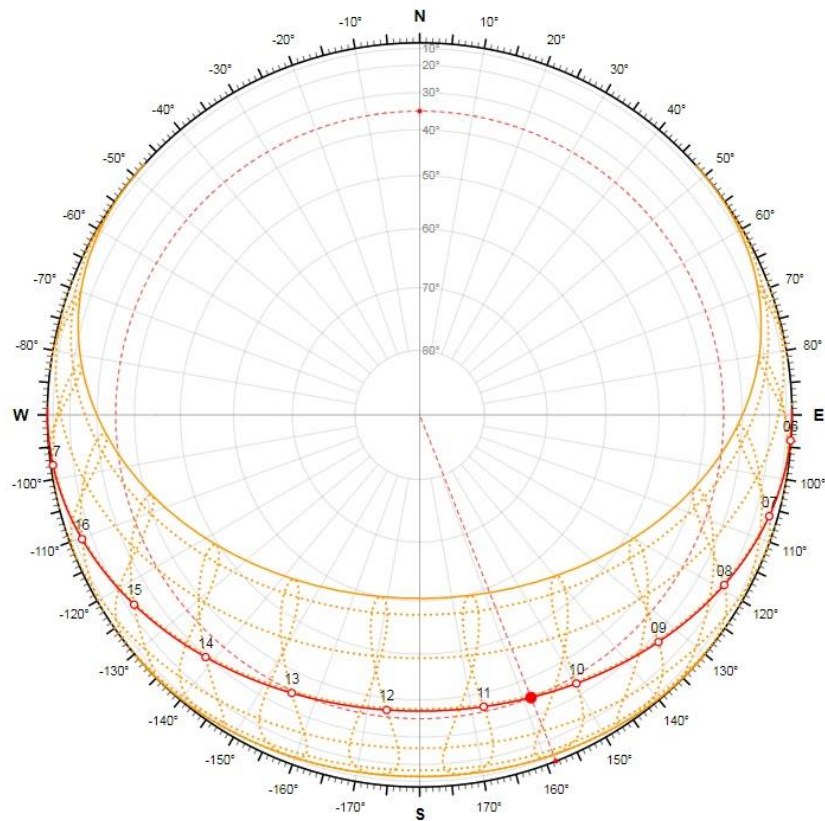
One for the location on the southern hemisphere -24N -8E:



One for the North Pole area latitude 82N -8E:



Finally the yearly sun path diagram for Coggalbeg, County Roscommon, Ireland with the latitude longitude: 53.7N, -7.8E:



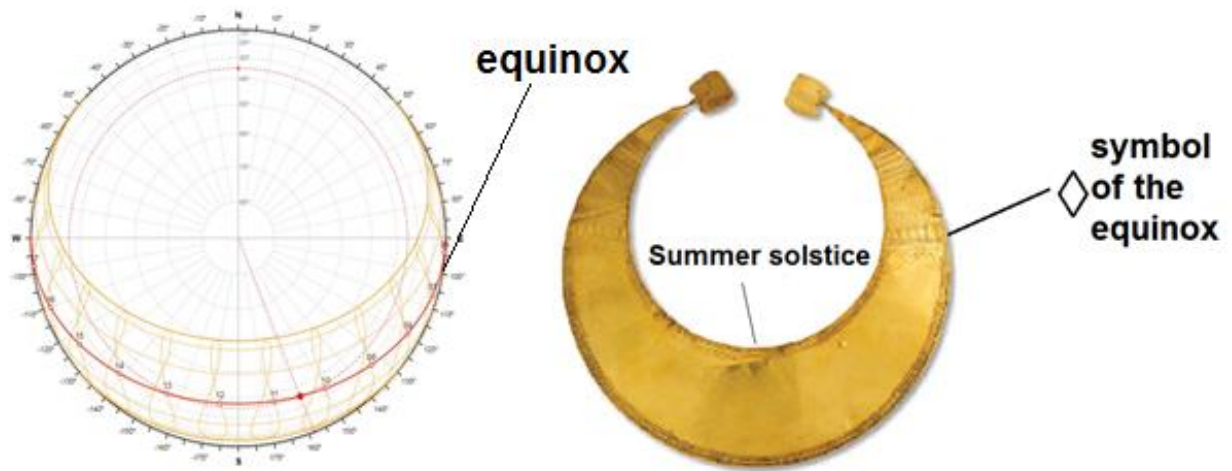
<https://www.google.at/maps/place/Coggalbeg,+Co.+Roscommon,+Ireland/@72.4947187,59.295433,2.37z/data=!4m5!3m4!1s0x485c267e488c2cd1:0x260dec06b0efff8a!8m2!3d53.7250742!4d-8.1496585>

So, what do we have here:



Exact Sun path for the location where this artefact has been found. Exact diagram of the yearly Sun path seen from the Coggalbeg (53.7N, -7.8E) by the ancient people.

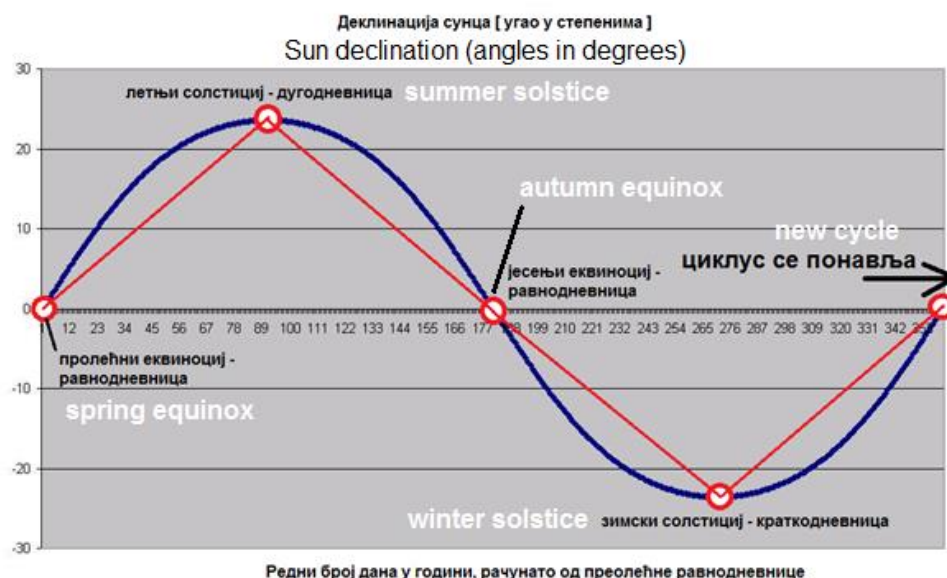
Connection with the shape of Coggalbeg hoard and Blessington lunula



About Equinox symbol, which has been put on the artefact exactly where equinox should be positioned



If we present this motion of the sun in a slightly different coordinate system, where the number of days per year is given to the abscissa, and at the ordinates the angle of declination of the sun, we get the following function, the form of sinusoid:



Where the sun declination of a given day in a year is calculated according to the following formula:

For the period from March 21 (spring equinox) to September 23 (autumn equinox):


Declination = $23.5 \sin(0.973n)$, where n is number of days, as from March 21st.


For the year of September 23 (autumn equinox) until March 21 (spring equinox):

Declination = $23.5 \sin(n-5)$, where n is number of days, as from March 21st.

What are we getting for the symbol for summer, winter, and spring and autumn equinoxes?

From the diagram, it is well visible that:

1. Summer can be easily symbolized with  or 

2. Winter with  or 

3. If the summer is  and winter is , what would be the transition from summer to winter, and vice versa from winter to summer?

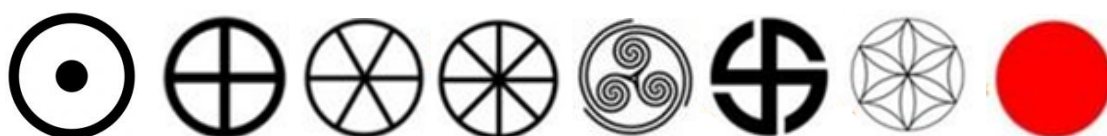
Let us just make the transition:   and we have our equinox symbol.

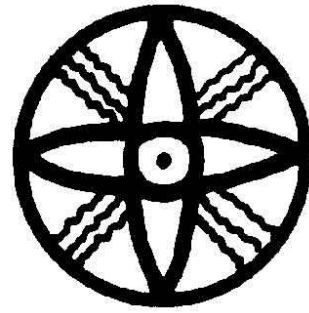
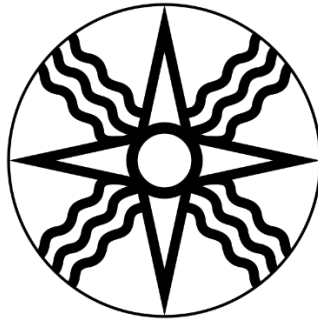
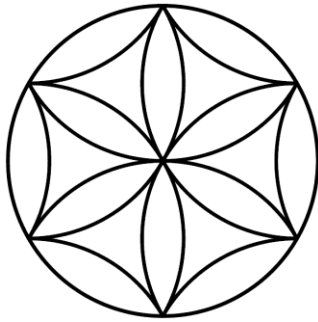
Below the equinox symbol, on the "lunula" you will find exactly the symbol of the winter



About the symbol of the Sun itself

Usual representation of the Sun in ancient Slavic, all Mid East cultures, Hittites, Cimmerian, Celtic...is given through the cross, six sides star, eight sides star, swastika, kolovrat, and lot more, for this purpose it is more than enough:





Disks from Coggalbeg are nothing else but two Suns:



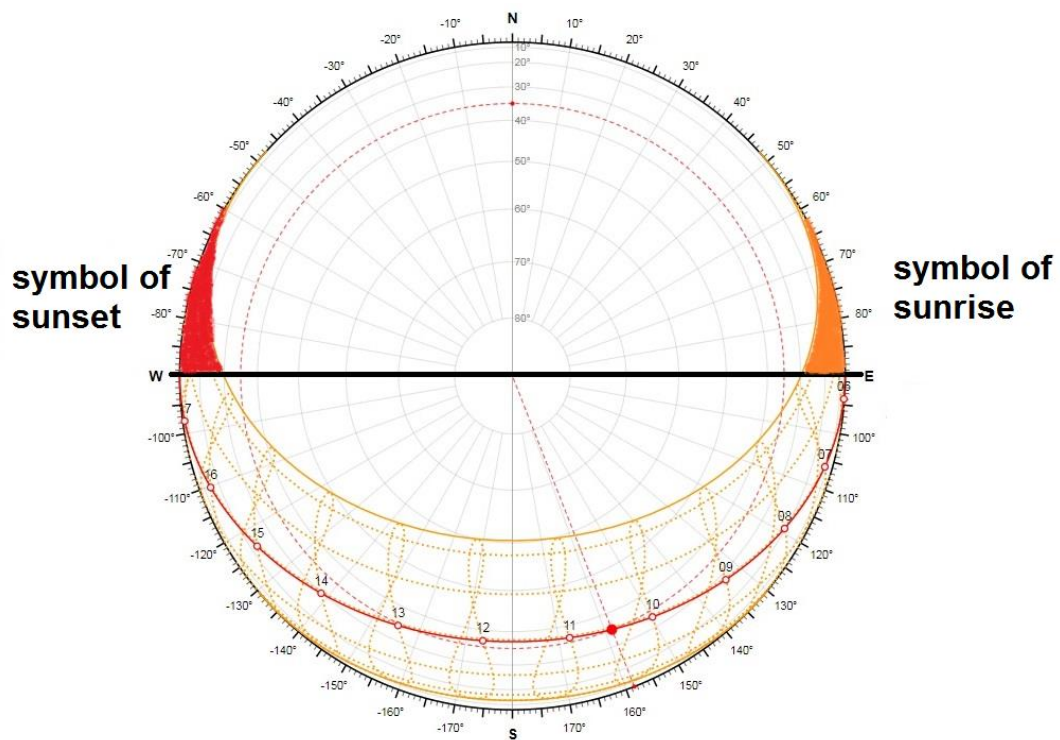
These two disks were probably positioned on the top of the sun path, like this:



Symbolizing the never-ending light and everlasting Sun. Period of the year when the day is the longest and nights are the shortest, celebrating life and birth, over death and stagnation. Of course, this last sentence is only my own interpretation.



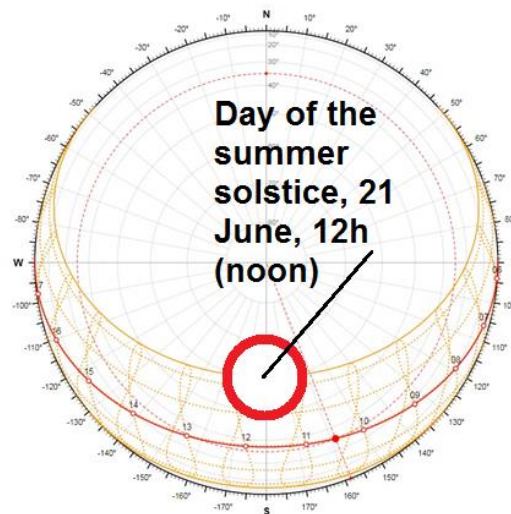
Reference book [1]



The same symbol on coat of arms on a building in Florence, Italy

Conclusion

Whit this short paper it is proposed that artefacts, such as Coggalbeg hoard and Blessington lunula, are not lunula's at all, but rather represent pure Solar symbols, exact Sun path diagrams of the location where they were excavated. The same Solar symbol exists on the huge number of different artefacts: coat of arms, flags, churches and other objects, see in the appendix. Covering territory of the Balkans, Black Sea Region and Central East and Eastern Europe where Slavic people were and still are the dominant population. For more information download a book written by Mr. Petko Viduša Nikolić "Stećci laž i bogumili" [1], and the book written by Nenad Šijaković "Istorijska trigonometrija", from Sribd.



Almost all known Lunula symbols are actually pure solar symbols better known as a tree of life [1], actually representing yearly sun path with the sun positioned in the summer solstice...Sun as a god is protecting you the best, when?...when it is in the highest position during the year, the highest position on the sky is on a summer solstice day, 21st June at 12h (Noon)...

Typical SOLAR "Lunulas" shown below ☺:



Appendix: The same symbols in the region of Balkan, Central, Central – east and East Europe, Mid East...



The symbol of the Illyrian coat of arms, the flag of the First Serbian Uprising, the coin from Roman times, the Sumero-Akkadian relief (similar stone reliefs throughout ancient Babylon, Mesopotamia and Assyria), left to right.

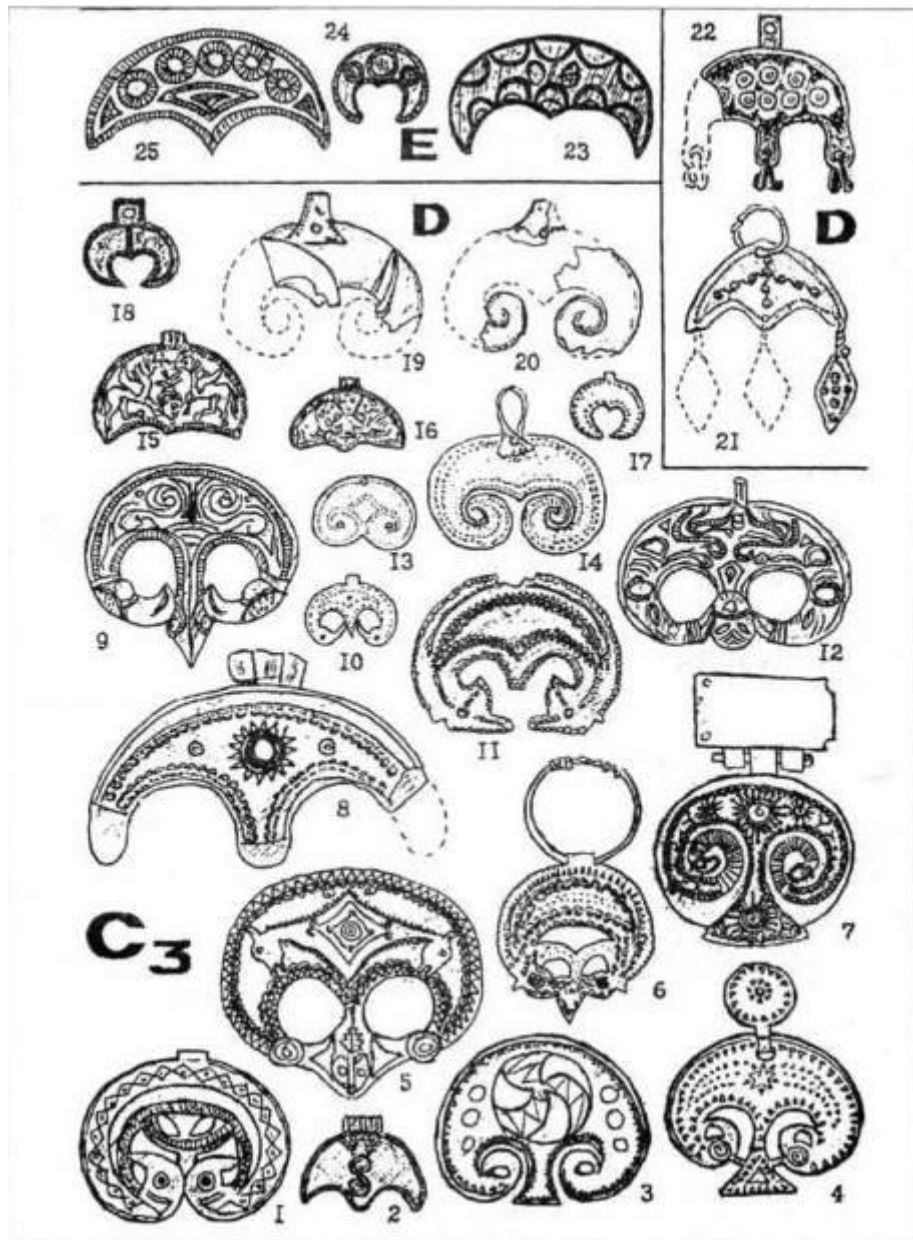


Symbol on reliefs of Hittite, Sumero-Akkadian culture, as well as on the stone monument from the Balkans, left to right.



Also falls "Lunula" found in Ukraine...





Falls lunar symbols – Pure solar symbol C better known as a tree of life, actually representing yearly sun path with the sun positioned in the summer solstice...Sun as a god is protecting you when...when it is in the highest position during the year, the highest position on the sky on a summer solstice day [1]...



Flag of the First Serbian Uprising, 19th century



A smaller part of the coats of arms with a given symbol from the Modena set of the coat of arms

Грб илирског покрета	Кућа Тарновскј у Пољској	Кућа Глижински у Пољској	Тарнов у Пољској	Голењов у Пољској
Орша у Белорусији	Лагојски рејон у Белорусији	Борзна у Украјини	Зенков у Украјини	Кућа Вороњецки у Русији
Елде у Немачкој	Хале у Немачкој	Вербен (Елбе) у Немачкој		

Stone reliefs on the Balkans

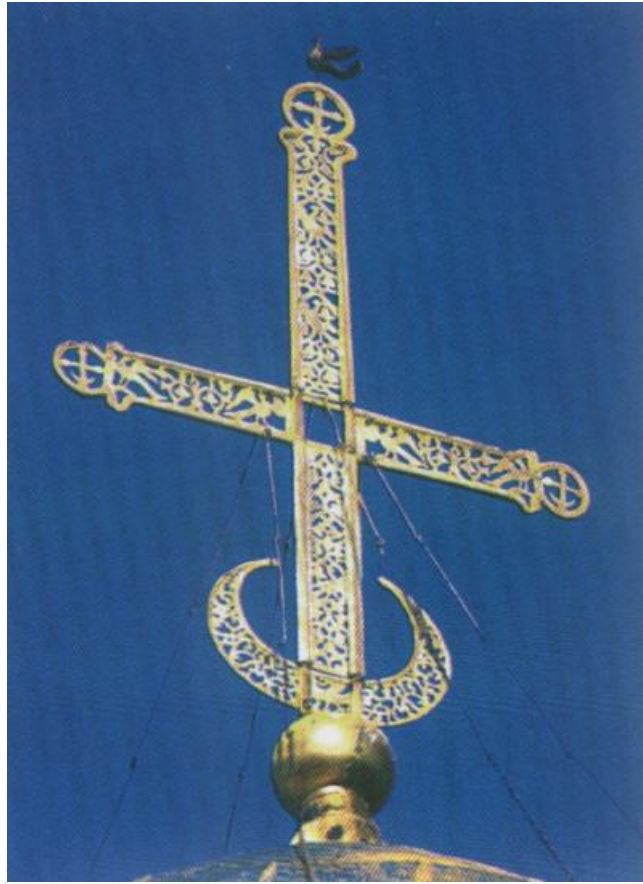


The reference [1]

Russian Orthodox Churches



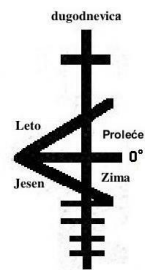
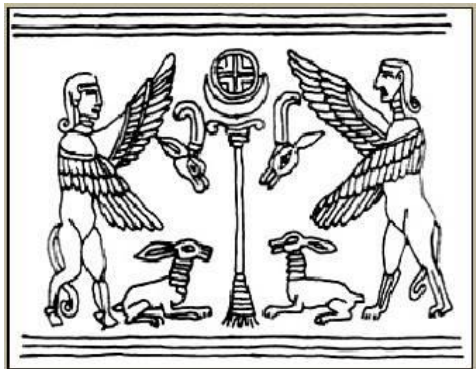
Domes of the Verkhospassky Cathedral in the Moscow Kremlin (XVII century)



Cross at the Dmitrievsky Cathedral in Vladimir (1194-1197)



Hittite culture symbols



Literature

[1] – Petko Nikolić Viduša, “Stećci laž i bogumili”, publisher “Pešić i sinovi”, Beograd 2014, ISBN 978-86-7540-185-8

About the Author



Nenad Šidaković, M.Sc. in Electrical Engineering, graduated in 2004 at the Faculty of Electrical Engineering in Belgrade. Got Magister of Science degree at the same faculty in 2011. From 2005 to 2016, he worked as expert for Strategy and System development planning in Transmission System Operator in Serbia, where from 2013 to 2016 he was Director of Center for Strategy and System Development Planning. Since 2016 he has been employed at the Secretariat of the Energy Community, headquartered in Vienna, in the position of expert for electricity infrastructure projects and energy security.

He is the author of more than twenty software solutions in the field of energy applications. He has published a significant number of works at domestic and foreign conferences, as well as in international journals. He speaks fluently English and possesses average knowledge of Russian language.

Editor of the web portal Pametarnica, which is engaged in research of history using tools more related to natural-mathematical sciences, research of the archeology of the Balkans and the Black Sea region, Tesla Ether Physics and the entire philosophy behind it.

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